

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-20 (cancelled).

21. (New) A method for operating an afterburner device for the afterburner device having a nozzle for metering in at least one of fuel, residual gases, and air, into a combustion chamber that is filled at least in part with foamed ceramics, and having a discharge opening for discharging combustion gases, the method comprising:

recording a speed of combustion in at least one of the combustion chamber and the foamed ceramics;

recirculating at least a part of the combustion gases to a heat exchange channel that is thermally coupled to at least one of the combustion chamber and the foamed ceramics; and

regulating a proportion of the recirculated combustion gases by changing a quantity of the recirculated combustion gases.

22. (New) The method as recited in claim 21, wherein the recording step includes measuring a temperature.

23. (New) The method as recited in claim 22, wherein the temperature is measured via an infrared light measurement.

24. (New) The method as recited in claim 21, wherein the quantity of the recirculated combustion gases is regulated based on the speed of combustion in the at least one of the combustion chamber and the foamed ceramics.

25. (New) The method as recited in claim 21, further comprising:

regulating a supply of the at least one of the fuel, residual gas, and air, as a function of the recorded speed of combustion.

26. (New) The method as recited in claim 25, wherein at too high a temperature or too great a speed of combustion, a supply of air is increased.

27. (New) The method as recited in claim 21, further comprising:

electrically heating at least one of the combustion chamber and the foamed ceramics.

28. (New) An afterburner device for making heat available from a fuel or residual gas from a reforming process or from a fuel cell process, the afterburner device comprising:

a first housing;

a combustion chamber situated in the first housing;

at least one nozzle for metering in fuel or residual gases into the combustion chamber;

and

at least one air supply;

wherein the combustion chamber is filled at least in part with heat resistant, open-pored foamed ceramics, which is coated at least in part with a catalytic material.

29. (New) The afterburner device as recited in claim 28, wherein the afterburner device is for a chemical reformer for obtaining hydrogen.

30. (New) The afterburner device as recited in claim 28, wherein the catalytic material is made up of at least one of ZnCuO and CuO.

31. (New) The afterburner device as recited in claim 28, wherein the foamed ceramics are made at least in part of silicon carbide.

32. (New) The afterburner device as recited in claim 28, wherein the foamed ceramics are made open-pored by reticulating.

33. (New) The afterburner device as recited in claim 28, wherein the foamed ceramics are electrically heatable.

34. (New) The afterburner device as recited in claim 28, wherein the foamed ceramics are in good heat-conductive contact with at least a part of the first housing.

35. (New) The afterburner device as recited in claim 28, wherein heat conducting elements run within the first housing.
36. (New) The afterburner device as recited in claim 35, wherein the heat conducting elements are made up of metal or a metal alloy, and run in the foamed ceramics or in the region of the air supply.
37. (New) The afterburner device as recited in claim 28, further comprising:
at least one recirculating line to recirculate combustion gases created during combustion into at least one heat exchange channel, the heat exchange being thermally coupled to the combustion chamber or the foamed ceramics, and configured to guide exhaust gas heat into at least one of the combustion chamber, the foamed ceramics, and a region of the air supply.
38. (New) The afterburner device as recited in claim 37, further comprising:
a controller that regulates or controls the recirculating of the combustion gases created during the combustion into the at least one heat exchange channel.
39. (New) The afterburner device as recited in claim 37, wherein the at least one heat exchange channel is made up of tubes.
40. (New) The afterburner device as recited in claim 39, wherein the tubes have a hollow, cylindrical shape.
41. (New) The afterburner device as recited in claim 37, wherein at least a part of the heat exchange channels is situated radially about the combustion chamber, parallel to an axis.
42. (New) The afterburner device as recited in claim 37, wherein at least a part of the heat exchange channels runs through the combustion chamber or the foamed ceramics.
43. (New) The afterburner device as recited in claim 37, wherein the at least one heat exchange channel guides the exhaust gas flow at least of onto and about the first housing.